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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,890	01/25/2002	Joo-sun Hong	Q66377	5435
23373 7590 06/05/2007 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER JONES, HEATHER RAE	
			ART UNIT 2621	PAPER NUMBER
			MAIL DATE 06/05/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/054,890	Applicant(s) HONG, JOO-SUN	
	Examiner Heather R. Jones	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2002 and 29 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed March 16, 2007 have been fully considered but they are not persuasive.

The Applicants argue on page 3, lines 19-22 that Takihara fails to disclose the claimed memory, a claimed interface portion, a claimed recording and reproducing portion, and a control portion, which all constitute a hard disk module. The Examiner respectfully disagrees. Takihara discloses in Fig. 2 a hard disk module comprising: a memory (122 and 123), an interface portion (125, which is connected to 357 of the motherboard), a recording and reproducing portion (124 – col. 10, lines 4-18), and a control portion (121). Therefore, Takihara meets the claimed limitations and the rejection is maintained.

The Applicant argues on page 4, lines 2-5 that Takihara does not disclose or suggest at least, that the PC module has a main board that is mounted on a modular television. The Examiner respectfully disagrees. The Examiner believes that the PC module of Fig. 3 corresponds to the main board represented as reference character "1" in Fig. 1 and that the hard disk module is reference character "2" in Fig. 1. Fig. 3 is a blown-up interpretation of the PC module (1) depicted in Fig. 1, which is what the Examiner is considering the main board. Furthermore, Takihara discloses in col. 8, lines 64-67 that a 1394 interface (I/F) of the mother board is connected to the MPEG1 Video deck module "2" (hard

disk module "2"), which is the same setup disclosed by the Applicant. Therefore, with those interpretations Takihara meets the claim limitations.

The Applicant argues on page 4, lines 8-11 that the "MPEG1 Video Deck Module" of Takihara does not disclose or suggest any element corresponding to "a memory having a program stored therein for controlling the entire components connected to a bus disposed inside the hard disk module" as recited in claim 1. The Examiner respectfully disagrees. Takihara discloses a memory (122 and 123) having a program stored therein for controlling the entire components connected to a bus disposed inside the hard disk module, which are described in col. 10, lines 5-8 - a CPU (121) that executes various processes in accordance with a program stored in a ROM (122). Data necessary for the CPU (121) to execute various processes are stored suitably into a RAM (123). Therefore, Takihara meets the claimed limitations and the rejection is maintained.

The Applicant argues on page 4, lines 20-22 that neither the Takihara reference or the Iizuka reference discloses or suggests that a hard disk is initialized by a control portion when the control portion receives the IRQ signal. The Examiner respectfully agrees. The Examiner took Official Notice in the previous Office Action stating that it is well known to initialize the hard disk when the control portion receives an IRQ signal. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have initialized the hard disk when the IRQ was received instead of before the recording process begins because up until the point where the IRQ signal is sent

the hard disk is not needed and therefore it would make sense to initialize it when the hard disk is needed and will be used because the hard disk may never be needed and it would therefore save the recording step a process by not having to initialize the disk if its not going to be used. Therefore, Takiara meets the claimed limitations and the rejection is maintained.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Takiara (U.S. Patent 6,941,387).

Regarding claim 1, Takiara discloses a hard disk module for a modular television including: an interface portion (357) for receiving and transmitting data from and to a main board (341) as a transmission stream, wherein the main board (341) is mounted on the modular television (Figs. 1 and 3); a memory (122 and 123) having a program stored therein for controlling the entire components connected to a bus disposed inside the hard disk module (2) (Fig. 5, col. 10, lines 5-8); a recording and reproducing portion for recording the data in a hard disk

(124) and reproducing the data recorded in the hard disk (124)(col. 10, lines 4-18); and a control portion (121) for controlling the recording and reproducing such that the recording and reproducing portion records in the hard disk (124) the data provided from the main board (341) through the interface (357) when in a recording mode, and when in a reproducing mode, reproduces the data recorded in the hard disk (124), and provides the reproduced data to the main board (341) through the interface (357) (col. 10, lines 4-18).

Regarding claim 2, Takihara discloses all the limitations as previously discussed with respect to claim 1 including that the recording and reproducing portion includes a buffer (373) for sequentially storing a predetermined amount of data therein, wherein the predetermined amount of data is received from and transmitted to the interface portion (357) (Figs. 3 and 4; col. 9, lines 20-24 and 54-59).

Regarding claim 3, Takihara discloses all the limitations as previously discussed with respect to claims 1 and 2 including that the interface portion (357) uses an Institute of Electrical & Electronics Engineers (IEEE) 1394 bus (col. 7, lines 50-59).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2621

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takihara (U.S. Patent 6,941,387) in view of Iizuka et al. (U.S. Patent 5,974,015).

Regarding claim 4, Takihara discloses a recording method of a hard disk module for a modular television including the step of storing data in a buffer (373) in a form of a transmission stream, wherein the data is received from the main board (341) mounted on the modular television via an interface portion (357) (Figs. 3 and 4; col. 9, lines 20-24 and 54-59). However, Takihara fails to disclose the steps of transmitting an interrupt request (IRQ) signal to a control portion via a recording and reproducing portion when a predetermined amount of data is stored in the buffer; and transmitting and storing the predetermined amount of data which is stored in the buffer, to a hard disk through the recording and reproducing portion in accordance with a direct memory access (DMA) method when recording data to the hard disk module.

Referring to the Iizuka et al. reference, Iizuka et al. discloses recording data to a hard disk module from a CPU section comprising the steps of transmitting an interrupt request (IRQ) signal to a control portion via a recording and reproducing portion when a predetermined amount of data is stored in the buffer; and transmitting and storing the predetermined amount of data which is stored in the buffer, to a hard disk through the recording and reproducing portion in accordance with a direct memory access (DMA) method (col. 11, lines 20-36).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the interrupt routine and the DMA method to record data to a hard disk as disclosed by Iizuka et al. with the hard disk module in a modular television as disclosed by Takihara in order to efficiently transmit data to and from a hard disk to the main board without losing any data.

Regarding claim 5, Takihara in view of Iizuka et al. discloses all the limitations as previously discussed with respect to claim 4 as well as further disclosing the step of transmitting a DMA command to the recording and reproducing portion when the control portion receives the IRQ signal (Iizuka et al.: Fig. 3; col. 14, lines 36-48). However, Takihara in view of Iizuka et al. fails to disclose initializing the hard disk by the control portion when the control portion receives the IRQ signal. Official Notice is taken that it is well known to initialize the hard disk when the control portion receives an IRQ signal. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have initialized the hard disk when the IRQ was received instead of before the recording process begins because up until the point where the IRQ signal is sent the hard disk is not needed and therefore it would make sense to initialize it when the hard disk is needed and will be used because the hard disk may never be needed and it would therefore save the recording step a process by not having to initialize the disk if it's not going to be used.

Regarding claim 6, Takihara discloses a reproducing method of a hard disk module for a modular television including the step of transmitting the data to the main board (341) through an interface portion (357). However, Takihara fails to disclose the steps of initializing a hard disk by a control portion and transmitting a direct memory access (DMA) command to a recording and reproducing portion; receiving data from the hard disk through the recording and reproducing portion in accordance with the DMA command and then storing the data in a buffer; and transmitting an interrupt request (IRQ) signal to the control portion through the recording and reproducing portion when a preferred amount of data is stored in the buffer when reproducing data from a hard disk module, wherein the main board is mounted on the modular television (Fig. 1).

Referring to the Iizuka et al. reference, Iizuka et al. discloses reproducing data from a hard disk module to a CPU section comprising the steps of initializing a hard disk by a control portion and transmitting a direct memory access (DMA) command to a recording and reproducing portion; receiving data from the hard disk through the recording and reproducing portion in accordance with the DMA command and then storing the data in a buffer; and transmitting an interrupt request (IRQ) signal to the control portion through the recording and reproducing portion when a preferred amount of data is stored in the buffer (Fig. 3; col. 11, lines 20-36).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the interrupt routine and the DMA

method to reproduce data from a hard disk as disclosed by Iizuka et al. with the hard disk module in a modular television as disclosed by Takiyama in order to efficiently transmit data to and from a hard disk to the main board without losing any data.

Regarding claims **7** and **8**, these are computer-readable recording medium for storing program codes claims corresponding to the method claims **4** and **5**. Therefore, claims **7** and **8** are analyzed and rejected as previously discussed with respect to claims **4** and **5**.

Regarding claim **9**, this is a computer-readable recording medium for storing program codes claim corresponding to the method claim **6**. Therefore, claim **9** is analyzed and rejected as previously discussed with respect to claim **6**.

Regarding claims **10** and **11**, these are apparatus claims corresponding to the method claims **4** and **5**. Therefore, claims **10** and **11** are analyzed and rejected as previously discussed with respect to claims **4** and **5**.

Regarding claim **12**, this is a computer-readable recording medium for storing program codes claim corresponding to the method claim **6**. Therefore, claim **12** is analyzed and rejected as previously discussed with respect to claim **6**.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2621

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heather R. Jones whose telephone number is 571-272-7368. The examiner can normally be reached on Mon. - Thurs.: 7:00 am - 4:30 pm, and every other Fri.: 7:00 am - 3:30 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on 571-272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2621

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Heather R Jones
Examiner
Art Unit 2621

HRJ
May 29, 2007



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